CIRM RFA 07-03

Application # FA1- 00610-1 (CIRM Center of Excellence)

PROPOSAL:

This applicant seeks CIRM funding for the construction of two floors of a six-story building that is to house programs in biomedical and health sciences at this institution. The request is for a CIRM Center of Excellence addressing basic discovery (Element X) and translational (Element Y) research activities. The total project cost is $80,600,000 with a CIRM funding request of $25 million. The CIRM-funded space would amount to 59,600 gross square feet (gsf) of the 200,000 gsf building or 29.8 percent of the total floor area of the project. The new building will provide research and teaching space for other campus programs on the other floors. The location of the CIRM Center will foster collaboration with other research programs in this new building, and with other institutions, including a hospital-based research group from a collaborating institution. The non-CIRM portion of the building will house several core facilities critical to stem cell work, including a vivarium expansion, an animal imaging core, and a molecular and cellular imaging core. The applicant believes that this CIRM Center will provide important momentum to the applicant's growing stem cell program.

The CIRM Center space consists of 40,975 assignable square feet (asf) that will include stem cell research laboratories for 12 Principal Investigators (PIs) and will house two important cores – a flow cytometry core and a cell culture core. Seven of the 12 PIs to be housed in the CIRM space are currently in other campus buildings and five PI's are to be recruited. The proposed facility will expand the space available for stem cell research in general, and human embryonic stem cell research in particular. The new space will provide researchers space for culturing non-Federal registry hESC cell lines. The core space will be open to other institutional-based researchers as well as researchers at collaborating institutions.

Completion of the project is scheduled for June 2010.

Space Summary Table

Space Category	Amount of Space (asf)	Percent of Total	Asf per PI at 12 PIs
Lab, Lab support & PI Offices	29,737	73%	2,478
Core Facilities	2,328	6%	194
Other Offices	1,574	4%	131
Admin and Support	7,336	18%	611
Total	40,975	100%	3,415

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STAFF ANALYSIS

VALUE:

Costs:

Cost Summary Table

Cost Category	Total Amount	Amount/PI@12
Building	$73,200,000	$6,100,000
Group 2 Equipment	7,400,000	616,667
Total	$80,600,000	$6,716,667
CIRM Amount	$25,000,000	$2,083,333
Applicant Amount	$55,600,000	$4,633,333

The estimated total project cost is $80,600,000 of which CIRM funds represent 32% of the total. The building assignable-to-gross efficiency is 68.8%, which is slightly better than the average of 65.5% for projects in the CIRM Institute and CIRM Centers funding categories. The cost per gross square foot is $1,228 compared to $608/gsf for the one other project in the CIRM Center funding category and $956/gsf average for the projects in the CIRM Institute funding category. This cost calculation is based on (1) allocating 29.8 percent of the overall building shell construction to this project (based on the proportion of the total area being constructed that is attributable to the CIRM Center), and (2) the contractor's estimate of the cost for the interior tenant improvements on the two floors that are designated as the CIRM Center.

The Group 2 Equipment budget represents an investment of $124/gsf. This is 14 percent more than the $109/gsf, which is the average for all applications in the CIRM Institute and CIRM Center funding categories, but is within the range of typical biochemistry laboratory equipment needs.

The CIRM cost for laboratory and PI related space (excluding cores) is $1,964,968 per PI. This cost is eight percent higher than the $1,815,443 per PI for the other application in the CIRM Center funding category and about 18 percent higher than the average of $1,663,073 per PI for all applications in both the CIRM Institute and CIRM Center funding categories.

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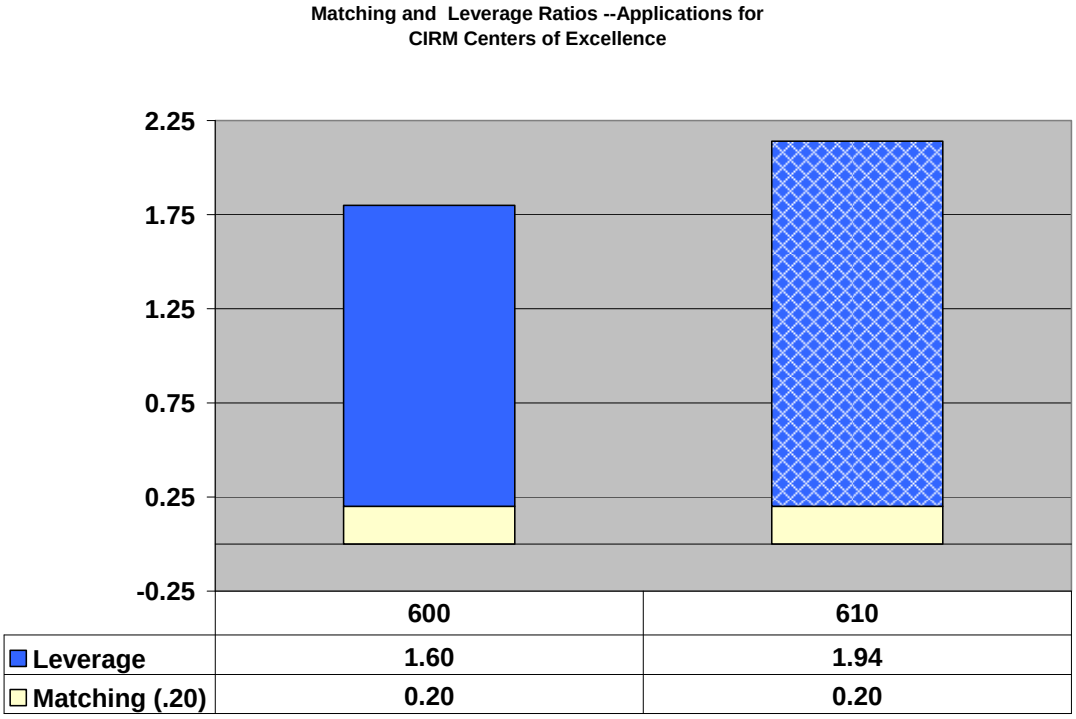
Sustainability and Innovation

Energy efficiency is a key element of resource sustainability documented in the application. The project will achieve a LEEDS certification at the Platinum level, provided elements of the design that currently cannot be evaluated under the LEED point system prove to be valid once the project is completed and certified. The project design also includes elements that the applicant demonstrates are equivalent to or exceed green building standards, such as using a design that includes more east and north facing windows and fewer south and west facing windows to control heat gain in the building. The applicant has worked extensively with the power utility company to identify elements that will help achieve greater energy efficiency.

Elements of the application cited as innovative include green roofs, clustering of offices and administrative space away from laboratories allowing use of operable windows and re-circulated air in these spaces and mobile, modular lab furniture fed from overhead utilities to facilitate future reconfiguration.

LEVERAGE:

The application includes leverage of $48,610,000. This represents the institutional investments in excess of the required matching funds after conforming to the allowable amount of fees and administrative costs. The CIRM funds to leverage ratio is 1:1.94. When both the matching and leverage funding are considered, the ratio rises to 1:2.14. The following table compares the leverage for this application to the other applicant in the category of CIRM Center.



	600	610
Leverage	1.60	1.94
Matching (.20)	0.20	0.20

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URGENCY:

The demolition phase is underway and the structural frame of the new facility is to be completed in May 2009. Interior work is to begin in July 2009 with the CIRM-funded floors to be completed in April 2010. Occupancy is planned for June 2010. The project qualifies for priority because completion is projected within two years of grant approval.

The applicant is utilizing a typical design-bid-build model. The applicant's team for managing delivery of the project is experienced in similar types of laboratory facilities. The design team has extensive experience in science laboratory building construction and has designed many California-based science laboratories, many of which also included extensive sustainability elements. The contractor has built more than 100 complex research facilities over the last 25 years, including sophisticated and demanding projects such as biosafety level 4 high-containment laboratories, vivaria and nanotechnology facilities.

SHARED RESOURCES:

This project benefits from facilities, equipment, or core laboratories (including staff dedicated to operation of the core laboratory) that will be available to the stem cell research program. In addition to the cores housed within the CIRM-funded space, the building will house several additional cores that will be important in supporting the stem cell research program. The building will house a brain imaging center with sophisticated equipment. The institution's available animal facilities are currently operating at capacity. The new vivarium facility will expand the animal housing and procedure space, and the location in the same building as the CIRM Center will enable an efficient workflow. In addition, the applicant has recently received a $4.5 million gift to equip a new molecular and cellular imaging core and animal imaging core to support stem cell research.

The applicant reports it has a number of important and highly successful core facilities and they will be available for CIRM funded researchers. These include the flow cytometry facility, functional genomics laboratory, gene targeting facility, DNA sequencing facility, molecular imaging center, mass spectrometry facility, NMR facility, molecular graphics and computation facility, electron microscopy lab, microfabrication laboratory, and others. These facilities serve both the applicant's institution and the surrounding scientific community.

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The applicant has emphasized shared use, and has taken steps to assemble a significant array of shared core resources that will assist a diverse group of researchers focusing and promoting stem cell research. These actions are intended to reduce the cost to CIRM and increase the value for the mission.

Cores:

- Flow Cytometry Facility
- Functional Genomics Laboratory
- Gene Targeting Facility
- DNA Sequencing Facility
- Molecular Imaging Center
- Mass Spectrometry Facility
- NMR Facility
- Molecular Graphics and Computation Facility
- Electron Microscopy Lab
- Microfabrication Laboratory

FUNCTIONALITY:

The proposed CIRM Center design responds to program needs by providing efficient (68.8% asf to gsf) space that shares flexible laboratories, shared support and core facilities with other programs in the same building. There are ample spaces for informal interaction within the building. The researchers in the CIRM space will benefit from close proximity to a variety of other life science research programs, as well as the vivarium and core facilities. The functional layout of labs, support, core facilities and offices is consistent with good design principles and safety standards.

SUMMARY OF ISSUES FOR THE FACILITIES WORKING GROUP EVALUATION

Cost: How will the FWG weigh the relatively high cost for this space in comparison to similar proposals? Is the apportionment of overall building costs for the CIRM project reasonable?

Shared Facilities/Functionality: How will the FWG evaluate shared resources in relation to functionality? The relatively small amount of core laboratories in the CIRM-funded project does not reflect the extensive number of core facilities available in the building that are not part of the CIRM-funded space, though these cores will benefit the stem cell research program.